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EXAMINER	
BARON, HENRY	
ART UNIT	PAPER NUMBER
2416	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/525,155	ANDRIEU ET AL.	
	Examiner	Art Unit	
	HENRY BARON	2416	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *03 October 2008*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *10 - 12, 14 - 23, 25, and 27 - 29* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *10 – 12, 14 – 23, 25 and 27 – 29* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

Detailed Action

DISTRIBUTION COMPARTMENTS FOR AN EFFICIENT AND FAILSAFE TRAFFIC DISTRIBUTION IN A PACKET-SWITCHED NETWORK

Response to Arguments/Remarks

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 10/03/2008 has been entered.

2. Claims 10 – 12, 14 – 23, 25, and 27 – 29 are currently pending in the application with claims 1 – 9, 13, 24 and 26 canceled and claims 10 and 12 are amended.

3. Applicant's arguments filed 10/03/2008 have been fully considered but they are not persuasive.

4. Applicant argues with respect to amended claim 10 that the 35 U.S.C § 102(b) rejection in view of Alfonsi et al (U.S. Patent 5,491,590) is improper as MPEP §2131 provides that a claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described in a single prior art reference. The identical invention must be shown in as complete detail as contained in the claim.

5. Applicant argues that as amended, claim 10 teaches of a method allows defining a node arrangement comprising a plurality of distinct node classes where each distinct node classes is distinguished from one another based on a number of hops required by each node in a given class to reach the egress node; and further, defining the node arrangement comprises dividing the nodes into the classes subject to a first condition that establishes for each node a path to the egress node be measured in a minimum number of hops and a second condition that establishes no loop formation within each distinct class.

6. By contrast the Alfonsi reference, Applicant argues appears to categorize nodes based on whether a node belongs to a backbone or local node class and has no logical connection to the claimed node arrangement.

7. Examiner agrees that the Alfonsi reference does not teach all of the limitations of amended claim 10 and 12 and their dependent claims, but the Alfonsi reference teaches more then categorizing nodes based on whether a node belongs to a backbone or local node class. Alfonsi Figure 7 shows an exemplary three node classes that are 1 HOP, 2 HOP, and 3 HOP(s) from egress node A. Alfonsi does not disclose the second condition of amended claim 10 i.e. that establishes no loop formation within each distinct class. This limitation, as cited below, is taught by the complementary reference Zaumen.

8. Applicant argues with respect to claim 12, Alfonsi does not teach of a method for defining a distribution fan-out for the distribution of traffic via different paths formed by nodes and connection sections for packet traffic having the same egress node and is therefore not anticipated by Alfonsi.

9. The Examiner replies that Alfonsi teaches in Figure 9, a method for defining a distribution fan-out for the distribution of traffic via different paths in a packet network formed by the nodes where the network is divided in a hierarchy of sub networks with an optimal clustering structures i.e. a distribution fan-out for the distribution of traffic. with transit nodes providing different paths formed by nodes and connection sections for packet traffic having the same egress node. As is the case for claim 10, Alfonsi alone does not disclose all of the limitations of amended claim 12. i.e. the second condition of amended claim 12 that establishes no loop formation within each distinct class. This limitation, as cited below, is taught by the complementary reference Zaumen.

Claim Rejections - 35 USC § 101

10. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

11. Claims 10 – 29 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

12. Claim 10 recites, " A **method for defining a distribution fan-out** for the distribution of traffic via different paths in a packet network formed by nodes and connection sections for packet traffic having the same egress node, the method comprising:.

defining a node arrangement comprising a plurality of distinct node classes, wherein each respective one of the distinct node classes is distinguished from one another based on a number of hops required by each node in a given class to reach the egess node;

wherein the defining of the node arrangement comprises **dividing the plurality of nodes** into the plurality of distinct classes subject to satisfying a first condition and a second condition, wherein the first condition establishes for each node a distance path to the egress node which is measured in a minimum number of hops, and the second condition establishes no loop formation within each distinct class, whereby nodes with the same minimum number of hops belong to the same class,

wherein from each node of a class, a link is routed to a node of a class having one fewer hop, and

wherein for a node of a class which is connected by a connection section to a node having the same class, a link between the node and the node of the same class is defined.-.

13. Claim 10 is rejected under 35 U.S.C. 101 because they do not fall within one of the four statutory categories of invention. While the claims recite a series of steps or acts to be performed, a statutory "process" under 35 U.S.C. 101 must (1) be tied to another statutory category (such as a manufacture or machine), or (2) transform underlying subject matter (such as an article or material) to a different state or thing *(Reference the May 15, 2008 memorandum issued by Deputy Commissioner for Patent Examining Policy, John J. Love, titled "Clarification of 'Processes' under 35 U.S.C. 101 ").*

14. The instant claim neither transform underlying subject matter nor recite structure associated with another statutory category, and therefore do not define a statutory process.

15. The claim elements " defining a node arrangement" and " dividing the plurality of nodes "

(1) do not tied to another statutory class (such as a particular apparatus) by identifying the apparatus (e.g. a request manager or a router manager) that accomplishes the method steps;

(2) are not structure required by the claim, or positively recited in the body of the claim in association with a step significant to the inventive concept.

16. A claim reciting an adequate structural tie must positively recite the structure of another statutory category in association with a step significant to the inventive concept. The following are examples of structural recitations that do not constitute adequate structural ties per se: (1) Structure recited in a preamble alone, (2) structure in a phrase expressing intended use or purpose, and (3) structure in a step insignificant to the inventive concept, such as nominal pre or post solution activity.

17. Claims 11 – 29 are also objected for the same reason as set forth above in claim 10.

Claim Rejections - 35 USC § 103

18. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> a. A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

19. Claims 10 – 11 and 14 – 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Alfonsi, et al (U.S. Patent 5,491,690), in view of Zaumen (U.S. Patent 5,881,243).

20. In consideration of claim 10, Alfonsi teaches a method for defining a distribution fan-out for the distribution of traffic via different paths in a packet network formed by nodes and connection sections for packet traffic having the same egress node, comprising defining a node arrangement (Figure 7 nodes arranged hierarchically Nodes A, Nodes W T X B, Nodes C Z Y C Z F Y, etc., comprising a plurality of distinct node classes (Figure 7, Distinct classes: Egress class Node A ; 1 HOP class Nodes W T X B; 2 HOP class Nodes C Z Y C Z F Y, etc.,) wherein each respective one of the distinct node classes is

distinguished from one another based on a number of hops required by each node in a given class to reach the egress node. And Figure 7 represents the optimum path tree of node A i.e. egress node, according to the present invention. 1 HOP class Nodes W T X B are all 1 hop from egress Node A; 2 HOP class Nodes C Z Y C Z F Y, are all 2 hops from egress node A etc) where the defining of the node arrangement comprises dividing the plurality of nodes into the plurality of distinct classes subject to satisfying a first condition that establishes for each node a distance path to the egress node (Figure 7, Distinct classes: Egress class Node A ; 1 HOP class Nodes W T X B; 2 HOP class Nodes C Z Y C Z F Y, etc., wherein each respective one of the distinct node classes is distinguished from one another based on a number of hops required by each node in a given class to reach the egress node) which is measured in a minimum number of hops. (15: [0025] read [t]he path between two nodes in the network is considered as optimum if the number of hops is minimum.) where from each node of a class, a link is routed to a node of a class having one fewer hop (Figure 7; e.g. Node Z of Class 2 HOP routed to Node W of Class 1 HOP, which is one fewer hop) and wherein for a node of a class which is connected by a connection section to a node having the same class, a link between the node and the node of the same class is defined. (1 HOP class Nodes W T X B are all 1 hop from egress Node A with links 701 and 702; 2 HOP class Nodes C Z Y C Z F Y, are all 2 hops from egress node A and one hop from class 1 HOP across links C-W, Z-W, Y-T, etc. and are etc FIG. 4 illustrates the decomposition of the network into a plurality of backbone nodes and local nodes, and note node X and W of a class which is connected by a connection section to a node having the same class.)

21. Alfonsi does not disclose a second condition that establishes no loop formation within each distinct class.

22. Zauman teaches of defining links on connection sections between nodes of a class with regard to loop freedom. (Figure 5 and 5: [0010]+ read FIG. 5 classifies the nodes in a network according to the state of the routing tables in nodes. The region C.sub.j consists of those nodes i.e. nodes of a class that

have a path to destination j, i.e. nodes of another class. 2: [0053]+ read .. algorithms eliminate counting to infinity, and the loop-free path finding algorithm by Garcia-Luna-Aceves and Murthy eliminates routing loops as well i.e. fulfills the second condition that establishes no loop formation within each distinct class).

23. It would have been obvious at the time the invention was made by a person of to having ordinary skill in the art to modify the teachings of fan-out distribution teachings of Alfonsi with the loop-free teachings of Zauman.

24. Advantageously, such a modification would allow the expeditious route for network traffic from one class to another, while same class nodes are configured loop-free so as to avoid broadcast storms.

25. In reference to claim 11, Alfonsi teaches where from each node of a class a link is routed along each connection section to a node of the class having one fewer hop. (see Figure 7 i.e. each node of a class a link is routed along each connection section to a node of the class having one fewer hop. e.g. node E to node Z, etc.).

26. Regarding claims 14 – 15, Alfonsi teaches of defining links on connection sections between nodes of a class, where links are defined according to a maximization of the number of outgoing logical links or as many possible outgoing links (Figure 7).

27. However, Alfonsi does not teach of defining links on connection sections between nodes of a class with regard to loop freedom.

28. Zauman teaches of defining links on connection sections between nodes of a class with regard to loop freedom. (Figure 5 and 5: [0010]+ read) FIG. 5 classifies the nodes in a network according to the state of the routing tables in nodes. The region C.sub.j consists of those nodes i.e. nodes of a class that have a path to destination j, i.e. nodes of another class. 2: [0053]+ read .. algorithms eliminate counting to infinity, and the loop-free path finding algorithm by Garcia-Luna-Aceves and Murthy eliminates routing loops as well.).

29. It would have been obvious at the time the invention was made by a person of to having ordinary skill in the art to modify the teachings of fan-out distribution teachings of Alfonsi with the loop-free teachings of Zauman.

30. Advantageously, such a modification would allow same class nodes to be configured in an optimal way so that broadcast storms are avoided.

31. Claims 12 and 16 – 23, 25, and 27 – 29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Alfonsi, et al (U.S. Patent 5,491,690), in view of Zaumen (U.S. Patent 5,881,243) and in further view in view of Corson (U.S. Patent 6,667,957).

32. In consideration of claim 12, Alfonsi teaches a method for defining a distribution fan-out for the distribution of traffic via different paths in a packet network formed by nodes and connection sections for packet traffic having the same egress node, comprising defining a node arrangement comprising of defining a plurality of distinct node classes, wherein each respective one of the distinct node classes is distinguished from one another based on a number of hops required by each node in a given class (Figure 7, Distinct classes: Egress class Node A ; 1 HOP class Nodes W T X B; 2 HOP class Nodes C Z Y C Z F Y, etc., Figure 7, Distinct classes: Egress class Node A ; 1 HOP class Nodes W T X B; 2 HOP class Nodes C Z Y C Z F Y, etc., wherein each respective one of the distinct node classes is distinguished from one another based on a number of hops required by each node in a given class to reach the egress node) to reach the egress node. (Figure 7 represents the optimum path tree of node A i.e. egress node, according to the present invention.) wherein the defining of the node arrangement comprises dividing the plurality of nodes into the plurality of distinct classes subject to satisfying a first condition that establishes for each node a distance path to the egress node which is measured in a minimum number of hops. (15: [0025] read [t]he path between two nodes in the network is considered as optimum if the number of hops is minimum.) wherein from each node of a class, a link is routed to a node of a class having one fewer hop, and wherein for a node of a class which is connected by a connection section to a node having the same

class, a link between the node and the node of the same class is defined. (FIG. 4 illustrates the decomposition of the network into a plurality of backbone nodes and local nodes, and note node X and W of a class which is connected by a connection section to a node having the same class. And (4: [0024]+ read [t]he reduction of routing table length is achieved through a hierarchical partitioning of the network. Basically, an m-level hierarchical clustering of a set of nodes (FIG. 9) consists in grouping the nodes (002) into a 1st level clusters (003), which in turn, are grouped into 2nd level cluster etc. and Figure 5 and 7 nodes W,T, and X e.g. one node of a class i.e. one hop, that is connected by a connection section to a node of the same class i.e. node T and X; at least one link between the node and a node of the same class is defined i.e. node X and W.).

33. Alfonsi does not disclose a second condition that establishes no loop formation within each distinct class and Alfonsi does not disclose for each link to the respective node that originates from a node having the same class as the respective node, the respective link is inverted, and when no link to the respective node originates from a node having the same class, all links to the respective node are inverted and when no link to the respective node originates from a node having the same class, all links to the respective node are inverted.

34. Zauman teaches of defining links on connection sections between nodes of a class with regard to loop freedom. (Figure 5 and 5: [0010]+ read) FIG. 5 classifies the nodes in a network according to the state of the routing tables in nodes. The region C.sub.j consists of those nodes i.e. nodes of a class that have a path to destination j, i.e. nodes of another class. 2: [0053]+ read .. algorithms eliminate counting to infinity, and the loop-free path finding algorithm by Garcia-Luna-Aceves and Murthy eliminates routing loops as well. i.e. a second condition that establishes no loop formation within each distinct class,).

35. It would have been obvious at the time the invention was made to a person of ordinary skill in the art to modify the distribution fan-out teachings of Alfonsi with the loop-free teachings of Zauman.

36. In this manner, traffic can be expeditiously routed to an egress point across links from higher hop class to a one less high hop class, while nodes within the same class connected across links would be configured loop-free mitigating broadcast storms and infinite loops.

37. However, Alfonsi modified by Zauman does not disclose where a node assigned to a class has one outgoing link and in the event of failure of the outgoing link, the directions of all the links coming into it and originating at nodes of the same class are inverted.

38. Corson teaches of the case where a node assigned to a class has one outgoing link and in the event of failure of the outgoing link, the directions of all the links coming into it and originating at nodes of the same class are inverted, (Figures 5a – 5e) and should no links coming into it and originating at nodes of the same class exist, all the links coming into it are inverted. (7: [0030]+ read ..the same reference level (which has been "reflected" i.e. inverted) has propagated to node i from all of its neighbors, but the reference level was not defined by node i.... Node i defines a new reference level. Following determination of its new height in cases 1, 2, 3, and 5, node i updates all the entries in its link-state array LS, and broadcasts an UPD packet to all neighbors j N.sub.i. The UPD packet consists of the new height of the node i which is broadcasting the packet, H.sub.i. When a node i receives an UPD packet from a neighbor j N.sub.i, node i first reacts as described in the prior description of creating routes. If the initial processing causes a link reversal i.e. inverts and node i loses its last downstream link-then it modifies its height as outlined in the cases above.)

39. It would have been obvious at the time the invention was made by a person of to having ordinary skill in the art to modify the teachings of fan-out distribution teachings of Alfonsi modified by the loop-free teachings of Zauman and the link reversal teachings of Corson.

40. Advantageously, with this modification, traffic to and from a node where one or more links are severed can be seamlessly redirected while maintaining service the end user and further such a

modification would allow the expeditious route for network traffic from one class to another, while for same class nodes are configured to avoid broadcast storms.

41. With regards to claims 18 – 21, Alfonsi modified teaches the limitations of claims 10, 11, and 12 respectively, but does not disclose the case of a node which is assigned to a class with at least two outgoing links, and in the event of failure of one of the outgoing links, the traffic to be routed via this link is distributed onto the other outgoing link or links.

42. Corson teaches of the case of a node which is assigned to a class with at least two outgoing links, and in the event of failure of one of the outgoing links, the traffic to be routed via this link is distributed onto the other outgoing link or links. (Figures 4a – b and 8: [0010]+ read FIGS. 4(a) and 4(b) provides an example where no reaction is required. The network is first depicted as at the end of FIGS. 2(a)-2(f), with the addition that link (D, E) is marked as failing. Since all nodes still have downstream links following the failure, no transmissions are required.).

43. It would have been obvious at the time the invention was made by a person of to having ordinary skill in the art to modify the teachings of fan-out distribution teachings of Alfonsi modified by Zaumen with the alternate route teachings of Corson.

44. Advantageously, with this modification traffic can seamlessly be rerouted from a node across an operational outgoing link in the event that one of the outgoing links fail.

45. With regards to claims 25, Alfonsi modified teaches the limitations of claim 11.

46. However, Alfonsi does not teach of the case where a node assigned to a class has one outgoing link and in the event of failure of the outgoing link, the directions of all the links coming into it and originating at nodes of the same class are inverted, and should no links coming into it and originating at nodes of the same class exist, all the links coming into it are inverted.

47. Corson teaches of the case where a node assigned to a class has one outgoing link and in the event of failure of the outgoing link, the directions of all the links coming into it and originating at nodes

of the same class are inverted, (Figures 5a – 5e) and should no links coming into it and originating at nodes of the same class exist, all the links coming into it are inverted. (7: [0030]+ read ..the same reference level (which has been "reflected" i.e. inverted) has propagated to node i from all of its neighbors, but the reference level was not defined by node i.... Node i defines a new reference level. Following determination of its new height in cases 1, 2, 3, and 5, node i updates all the entries in its link-state array LS, and broadcasts an UPD packet to all neighbors j N.sub.i. The UPD packet consists of the new height of the node i which is broadcasting the packet, H.sub.i. When a node i receives an UPD packet from a neighbor j N.sub.i, node i first reacts as described in the prior description of creating routes. If the initial processing causes a link reversal i.e. inverts and node i loses its last downstream link-then it modifies its height as outlined in the cases above.)

48. It would have been obvious at the time the invention was made by a person of to having ordinary skill in the art to modify the teachings of fan-out distribution teachings of Alfonsi modified by Zaumen with the link reversal teachings of Corson.

49. Advantageously, with this modification, traffic to and from a node where one or more links are severed can be seamlessly redirected while maintaining service the end user.

50. With regards to claims 27, 28, and 29, teaches Alfonsi modified teaches the limitations of claims 10, 11 and 12 respectively.

51. However, Alfonsi modified does not teach of the event of failure of an outgoing link of a node assigned to a class, the class of the node is redefined if the duration of the failure exceeds a limit value.

52. Corson teaches of the event of failure of an outgoing link of a node assigned to a class, the class of the node is redefined if the duration of the failure exceeds a limit value. (6: [0019] read When a node i receives an UPD packet from a neighbor j.epsilon.N.sub.i, node i first updates the entry HN.sub.i,j, in its height array with the height contained in the received UPD packet and then reacts as follows: (a) If the route-required flag of the receiving node is set and the height contained in the received UPD packet is

non-NULL with r=0, it sets its height to H.sub.i =(T.sub.j, oid.sub.j, r.sub.j, .delta..sub.j +1, i), where HN.sub.i,j =(T.sub.j, oid.sub.j, r.sub.j, .delta..sub.j, j) is the height contained in the received UPD packet, updates all the entries in its link-state array LS, unsets the route-required flag and broadcasts an UPD packet that contains its new height. (b) If the above condition does not hold true, the receiving node simply updates the entry LS.sub.i,j in its link-state array.)

53. It would have been obvious at the time the invention was made by a person of to having ordinary skill in the art to modify the teachings of fan-out distribution teachings of Alfonsi with the update teachings of Corson.

54. Advantageously, with this modification, traffic to and from a node where one or more links are severed the node can be redefined in a timely manner.

55. Regarding claims 16 and 17, Alfonsi with modification from Zauman teaches the limitations of claims 14 and 15 respectively. Alfonsi with modification from Zauman do not disclose nodes sequenced according to the number of outgoing links and, if nodes have the same number of outgoing links, according to the capacity of the incoming links, and performing for at least some of the nodes, depending on their sequence: identifying the shortest path from the node to the set of nodes of the class which is fewer by one, paths via outgoing links leading directly to nodes of the class N-1 being disregarded, and incorporating the link via the first connection section of the identified path into the distribution fan-out as a link, if an identified path does not lead to a loop within the nodes of the class. (6: [0036] read [a]n example of the creating routes process is illustrated in FIGS. 2(a)-2(f). The respective heights are shown adjacent to each node, and the destination for which the algorithm is running is marked DEST. A circle around a node indicates that its route-required flag is set. Recall that the last value in each height is the unique ID of the node, and that lexicographical ordering is used to direct links i.e. sequence and (2: [0065] read ..TORA (Temporally Ordered Routing Algorithm) is "source initiated" and creates a set of routes to a given destination only when there is message traffic for that destination. It guarantees all

routes are loop-free, and typically provides multiple routes for any source/destination pair that requires a route.).

56. It would have been obvious at the time the invention was made by a person of to having ordinary skill in the art to modify the teachings of fan-out distribution teachings of Alfonsi modified by Zaumen with the loop free sequence teachings of Corson.

57. Advantageously, with this modification, the set of nodes within a class or same height level will have the minimum number of loop-free outgoing links so in the event of failed outgoing link, the links of the node can be easily redirected.

58. With regards to claims 22 and 23, Alfonsi in modification with Zaumen teaches the limitations of claims 16, but does not disclose the case of a node which is assigned to a class with at least two outgoing links, and in the event of failure of one of the outgoing links, the traffic to be routed via this link is distributed onto the other outgoing link or links.

59. Corson teaches of the case of a node which is assigned to a class with at least two outgoing links, and in the event of failure of one of the outgoing links, the traffic to be routed via this link is distributed onto the other outgoing link or links. (Figures 4a-b and 8: [0010]+ read FIGS. 4(a) and 4(b) provides an example where no reaction is required. The network is first depicted as at the end of FIGS. 2(a)-2(f), with the addition that link (D, E) is marked as failing. Since all nodes still have downstream links following the failure, no transmissions are required.).

60. It would have been obvious at the time the invention was made by a person of to having ordinary skill in the art to modify the teachings of fan-out distribution teachings of Alfonsi modified by Zaumen with the alternate route teachings of Corson.

61. Advantageously, with this modification traffic can seamlessly be rerouted from a node across an operational outgoing link in the event that one of the outgoing links fail.

Conclusion

62. Any inquiry concerning this communication or earlier communications from the examiner should be directed to HENRY BARON whose telephone number is (571)270-1748. The examiner can normally be reached on 7:30 AM to 5:00 PM E.S.T. Monday to Friday.

63. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Seema Rao can be reached on (571) 272-3174. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

64. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/H. B./
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/Ian N. Moore/

Primary Examiner, Art Unit 2416